Music Technology Vocabulary Definitions

Each vocabulary list below has an interactive Wordwall and a Teams test associated with it. Links are at the top of each page.

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1. Introduction to Sound

Wordwall match up 1 – https://wordwall.net/play/60104/083/617

Volume	A subjective perception of how loud a sound is. (Generally use the words amplitude or level or perceived loudness)
Amplitude	The height of a waveform measured from its mean or zero position to its maximum displacement.
Frequency	The pitch of a sound
Wavelength	the distance between the two successive peaks or two successive troughs of a wave.
Hertz	The units for frequency and for sample rate. Also means 'per second'
Cycle	A 'complete wave' that moves from 0, through its maximum and minimum, then back to zero again.
Oscillation	regular variation in magnitude or position about a central point,
Phase	the position of a wave at a point in time (instant) on a waveform cycle
Constructive Interference	When sound waves are in phase then the peaks & troughs line up, increasing the amplitude.
Destructive Interference	When sound waves are out of phase then the peaks & troughs do not line up, decreasing the amplitude.
Harmonics	Quieter frequencies than the fundamental frequency you hear above the pitch of the fundamental frequency of a note.
Decibels (dB)	The unit used to measure sound pressure level. This relates to what we perceive as 'loudness' or 'volume'. Measured on a logarithmic scale.
XLR	A connector commonly found on microphones and other balanced signals.

2. Microphones

Wordwall match up 2 - https://wordwall.net/play/60104/427/669

Transducer	A device that converts between different types of energy, for example, a microphone’s capsule converts a sound into electrical energy.
Coil	The part of a dynamic microphone that moves within a magnetic field. As it moves an electric current is induced into it.
Diaphragm	A small flexible piece of material in a microphone that responds to physical vibrations of sounds which is then converted into an electrical signal.
Condenser microphone	Uses two charged metal plates (a diaphragm and backplate) that form a capacitor. The movement of the diaphragm and the change in spacing produces the electrical signal that corresponds to the sound that's picked up.
Dynamic microphone	This has a moving coil attached to the diaphragm within a magnetic field that generates a small electrical signal as it moves.
Ribbon microphone	This has a thin strip of metal that moves within a magnetic field and generates a small electrical signal. Commonly has a figure of 8 polar pattern.
PZM	Pressure Zone Microphones. Used to capture reflections, these mics fix to a flat surface. Also called Boundary mics, they can be used for recording piano by attaching the mic under the piano lid.
Electret	This is a cheaper type of condenser mic that has a permanently charged plate.
Polar Pattern	the space around a microphone where it picks up sound or is the most sensitive to sound.
Electromagnetic Induction	The method by which dynamic microphones convert sound energy into electrical energy.
Proximity Effect	The increase in bass response captured by a directional microphone depending on the distance of a sound source from the microphone.
Frequency Response	The frequencies a microphone picks up in relation to the human hearing range. The flatter the graph, the more ‘true’ the sound is.
Plosive	A sound which results from letters such as ‘P’, 'D’ and ‘B’, which when spoken ‘directly into a microphone can result in a low frequency ‘pop’ sound due to the strong air movement on a microphone’s diaphragm.
Sibilant sounds	‘s’-like sounds which often jump out of the mix. Some engineers tape a pencil to the microphone to avoid this, or a deesser can be used in post production.

3. Synthesisers

Wordwall match up 3 - https://wordwall.net/play/60104/540/570

VCO (Voltage Controlled Oscillator.)	A device found in a synthesiser that generates waveforms used for sound generation and modulation.
VCF (Voltage Controlled Filter)	Removes frequencies to shape the sound.
VCA (Voltage Controlled Amplifier)	An amplifier that varies its gain depending on control voltage. Is often controlled by an envelope.
Resonance	Emphasizes portions of the signal above (HPF) or below (LPF) the defined cutoff frequency.
Cut off frequency	In a highpass filter, this frequency determines the point where lower frequencies are suppressed and frequencies above this are allowed to pass.
Envelope	**Allows users to control the different stages of a sound.** ***Typically has four parameters: Attack, Decay, Sustain and Release.***
LFO	An oscillator that oscillates at between 0 and 20 times a second. (0 – 20Hz)
Analogue synthesis	Uses an electrical voltage to generate a signal which is then shaped.
Digital synthesis	Uses computer technology to model other synthesisers & generate sounds.
FM Synthesis	A type of digital synthesis with a carrier wave and a modulator wave.
Trigger	A short signal that is sent when a key is pressed (typically to tell the next part of the synth what to do)
Polyphonic	More than one note simultaneously
Monophonic	A single musical line
Legato	Smooth playing with no gaps in between. On a synth this means that the sound will restart envelopes only when there is a gap between the release of one note and the attack of the next
Glide / portamento	A control on synthesisers to continuously alter the pitch of a note by sliding between the original pitch and the destination pitch.
Pitch Bend	A control on synthesisers to bend the pitch of a note up and down by a predetermined amount.
Modulation	Literally means 'changing' - but normally used to include effects with some

	movement to them such as chorus, flanger or an LFO.

4. Dynamic Processors

Wordwall - https://wordwall.net/play/61169/852/805

Dynamic range	The difference between the loudest and quietest parts of a track, song or part
Compression	This reduces the dynamic range
Threshold	Above this level a compressor begins to compress
Ratio	The relationship between the Input volume:Output volume (how much the compressor will reduce the signal by).
Make Up Gain	How much you turn the amplitude back up after compression has taken place
Attack	How quickly a compressor starts to work after the threshold has been crossed
Release	How quickly a compressor stops working after the sound level falls back below the threshold
Peak	A setting on the compressor that calculates the volume based on short bursts of sound.
RMS	A setting on the compressor that calculates the amplitude based on an average level.
Knee	A hard ____ compressor applies the ratio as soon as the threshold is crossed. A soft ____ compressor gradually increases the ratio as the threshold is approached.
Limiter	An extreme compressor. A compressor with an infinity:1 ratio.
Overcompression	If too much compression is applied to a track.
Sidechain	Compression triggered by one track, but applied to another.
Noise Gate	Removes all audio that falls below a certain threshold.

5. Equalisation

Wordwall - https://wordwall.net/play/61172/751/717

Equalisation (or EQ)	The process of altering the frequency response of an audio signal.
Filter	Removes or attenuates certain frequencies in an audio signal.
Low Pass	Removes frequencies above a cut off frequency
High Pass	Removes frequencies below a cut off frequency
Attenuation	A reduction in the amplitude of a signal
Boost	An increase in the amplitude of a signal
Parametric EQ	An adjustable EQ which can attenuate or boost a signal. You can change the bandwidth and centre frequency, which gives a lot of control over this type of EQ. There are often several available, which you can combine.
Graphic EQ	Commonly used in live sound, there are a series of sliders on this type of EQ. The sliders have fixed frequency bands.
Resonance	Frequencies near the cut off frequency are emphasised.
Q (Quality)	The width of a notch filter or band pass filter. A high value is a narrow frequency range.
Bandwidth	The range of frequencies within a signal or band pass filter. A high value is a narrow frequency range.
Cut Off frequency	The point at which the filter begins to remove frequencies; it is precisely measured when the amplitude has dropped by 3dB.
Centre Frequency	The mid-point of a band pass filter.
Gain	Sets the amount of attenuation or boost on a shelf or parametric EQ

6. Reverb

Wordwall - https://wordwall.net/play/61937/880/201

Keyword	Definition
Anechoic Chamber	A room designed to absorb as much sound as possible, creating a near-silent environment.
Convolution Reverb	A type of digital reverb that uses impulse response (IR) files which provide a realistic emulation of an acoustic space.
Digital Reverb	Reverb that is mathematically calculated using lots of delays. This reverb is created using algorithms.
Echo Chamber	A special type of room, usually constructed of brick or stone and featuring a long reverberation time, that is used to create an echo effect.
Gated Reverb	A type of reverb effect in which the effect is suddenly cut off after a certain amount of time.
Impulse Response (IR)	A digital recording of a sound's response in a given space or environment.
Live Room	A room that is designed to minimize reflections and provide an acoustically neutral environment.
Plate Reverb	A type of reverb effect created by vibrating a metal plate.
Reflections	The sound waves that are reflected off surfaces in an acoustic space.
Reverb	The effect of sound being reflected off surfaces in an acoustic space, creating a sense of space and depth.
Reverse Reverb	A type of reverb effect in which the reverb is played in reverse.
RT60	The time it takes for the reverberation of a sound to decay by 60dB. Commonly known as the reverb time.
Spring Reverb	A type of reverb effect created by using a spring to vibrate sound.
Decay time	The time it takes for the reverb to get quieter. (see also RT60)

7. Sampling

Wordwall **https://wordwall.net/play/63151/490/536**

Forms https://forms.office.com/e/TvNQpVac9N

Mellotron	A 1960s keyboard instrument that played strips of tape with recordings of different instruments on.
Destructive Editing	Editing that cannot be 'undone' and actually changes the original audio recording itself.
Multisampling	The technique of recording multiple samples of the same instrument at different pitches. This prevents you from having to pitch shift the samples too far.
Velocity Layering	The technique of recording multiple samples of the same instrument at different velocities. This captures the timbre changes at different velocities.
Keyboard Tracking	changing of the filter frequency relative to the note played. E.g. When you want lower sounds to be warm and dull, but not filter out all the high sounds when you play up on the keyboard
Sample Rate	The number of samples per second used to record audio.
Bit Depth	The number of bits of information used to store each sample.
Normalisation	The process of adjusting the level of a sample to a consistent level. The loudest part of the sample will be adjusted to 0dB
Looping	Repeating a section of a sample.
Stuttering & Gapping	A type of editing where a sample is chopped up and rearranged in a new order
Progressive Diminution	A technique used to alter the length of a sample by gradually decreasing its size.
Pitch Shift	The ability to alter the pitch of a sample without affecting its length.
Reversing	The technique of playing a sample backwards.
Phase Inversion	The technique of reversing the phase of a sample.
Time Stretch	The ability to alter the tempo of a sample without affecting its pitch.

8. Delay

Wordwall https://wordwall.net/play/63565/282/386

Analogue	These types of delays **capture the continuous signal with varying voltages that represent sound.**
Digital	These types of delays capture the audio with 0s and 1s, which are non-continuous signals.
Tape Head	Used to read the signal from the tape (play head) or, to write a signal to the tape (record head). An erase head wipes the tape of the audio signal.
Delay Time	A parameter used to set the amount of delay in milliseconds.
Feedback	The effect created when a delay signal is fed back into itself, creating a loop of repeats.
Slapback Delay	A type of delay effect where a single repeat is used to create a thickening effect. Usually between 40ms and 150ms
Timed Delay	Repeats of the original signal which are synchronised with the tempo of the music to give repeats which are 'in time'
Stereo Delay	Repeats of the original signal which pan from left to right or move across the stereo field. Sometimes called 'ping pong' delay.
Sample Delay	A very short delay, measured in samples, allowing for phase correction or helping to create ADT effects.
Multitap Delay	A digital delay with multiple delay times and repeats, allowing complex rhythms to be built up.
Reverse Delay	The echo or delayed signal is recorded and played backwards; the original recording is then played as normal, but the delay now comes before it.
Doubletracking	recorded twice, singing or playing the same thing and played back simultaneously.
ADT	This involves copying the audio onto a second track and then slightly delaying and detuning the original signal, panning the original and copy left and right. This gives a 'thickening' effect

	that is often applied to guitars and vocals
Stompbox	a foot-pedal controlled device, that can be used to add effects to guitars etc.

9. Modulation

Wordwall- https://wordwall.net/play/64009/207/462

Terminology	**Definition**
Modulation	This means changing. In music technology, the term normally applies to a control signal being used to change some aspect or parameter of another signal. E.g. amplitude or frequency being changed with an LFO.
Chorus	A shimmering effect, produced by modulation of pitch and delay time to produce a layered effect (‘chorus of voices’). Dry/wet.
Flanger	A sweeping effect, produced by modulation of delay time with feedback to produce a ‘jet-plane’ effect with movement. Dry/wet.
Phaser	Creates movement in a sound through the use of all pass filter to modulate the phase/delay depending on the frequency (‘non-linear’). Dry/wet.
Vibrato	Modulates the pitch of a signal. Has no wet / dry control.
Tremolo	Modulates the amplitude of a signal. Has no wet / dry control.
Rate	How fast the periodic change of the parameter takes place (wave frequency)
Depth	How much a parameter modulated by an LFO is varied (wave **amplitude**)
LFO	Low Frequency Oscillators (a type of signal often used to make a parameter modulate over time).
Leslie Speaker	a system of **rotating speakers** used primarily with the Hammond Organ in the 1960s. Uses the ‘doppler’ effect to create modulation.
Crossover	A type of filter which splits an audio signal into two or more frequency bands.
All Pass Filter	This doesn’t change the amplitude of any frequency but it does change the phase of above / below whichever frequency you set the cutoff at by delaying the signal slightly for those affected frequencies. It is used in a phaser.
Wet Signal	The processed audio signal.
Dry Signal	The unprocessed audio signal.

10. Distortion

Wordwall - https://wordwall.net/play/64418/655/257

Terminology	Definition
Pedal	A hardware device used to create various effects on an electric guitar.
Gain	On a distortion pedal, this control can be used to vary the amount of signal that you are inputting into the distortion section.
Tone	On a distortion pedal, this changes the frequency content of the output
Output	On a distortion pedal, this controls the level of the signal after it has been processed.
Clipping	The process of limiting the maximum peak amplitude of a sound wave by cutting off the tops and bottoms of its waveform.
Hard Clipping	A method of distortion created by transistor amps which produces a square-shaped waveform.
Soft Clipping	A method of distortion created by valve amps which produces a rounded waveform.
Valve Amp	An amplifier that uses vacuum tubes to increase the amplitude of a signal
Transistor Amp	An amplifier that uses transistors to increase the amplitude of a signal.
Fuzz	A dense type of distortion effect characterized by a clipped, fuzzy sound.
Overdrive	A type of distortion that tries to emulate the sound of overdriving a vacuum tube. This was originally created by pushing amps louder than they were designed to go.
Harmonics	The additional frequencies produced by an instrument or effect that are higher than the original signal.
Threshold	Sounds that go above this level are distorted. (Sounds that have been distorted have a smaller dynamic range than the same non-distorted sound).

11. Creative Effects

Wordwall - https://wordwall.net/play/64836/736/872
Forms - https://forms.office.com/e/fa6dfX2Rzs

Talkbox	A device that modifies the sound of a vocal signal by using the mouth as a filter.
Vocoder	A device that modifies the sound of a vocal signal by using a carrier signal.
Carrier	A signal that is used to modulate another signal, typically used in vocoders.
Modulating Signal	A signal that is used to modulate another signal, typically used for creative effects. (Also known as the carrier signal)
Ring Modulation	The process of mixing two signals together, the resulting sound being the sum and difference of the two signals.
Frequency Products	These are created by a ring modulator, when two signals are added together.
Pitch Correction	The process of altering the pitch of a signal to match the desired pitch.
Response Time	In a pitch correction plugin, this determines how quickly the voice reaches the corrected destination pitch.
Scale	An ordered sequence of notes. When using pitch correction, you can choose which one you would like to use according to the key of your melody.
Pan	The act of adjusting the relative levels of the left and right channels of a stereo signal.
Pitch Shift	The process of altering the pitch of a signal by a specified amount.
Harmoniser	A device or software that alters pitch, either by adding, subtracting, or shifting the pitch of an incoming signal.
Cents	A unit of measure used to describe the difference in pitch of two notes. One of these is equal to one hundredth of an semitone.
Bypass	A button on a plugin which turns a plugin off, leaving the audio signal to pass through unaffected.

12. MIDI

Wordwall https://wordwall.net/play/65234/099/935

Term	Definition
MIDI Controller (Hardware)	A MIDI device that is used to control the parameters of a MIDI sound or instrument. E.g. A MIDI Keyboard, or a MIDI Drum kit.
Amplitude Envelope	The set of controls on a synth to change the Attack, Decay, Sustain and Release of a sound.
Expression (MIDI controller 11)	Volume fine tuning. Controller 11. Often used for dynamics in MIDI programming
Glide (portamento) MIDI controller 65	When this is turned on, there is a smooth movement from one pitch to another.
MIDI	The acronym for Musical Instrument Digital Interface, a communication protocol that allows electronic musical instruments, computers, and other devices to communicate.
MIDI Channel	A specific communication channel within the MIDI protocol that is used to send and receive messages. There are 16 of these available in the standard MIDI specification.
Modulation (MIDI controller 1)	Adds vibrato to a sound (modulates pitch)
Polyphony	The ability of a MIDI device to play multiple notes simultaneously.
Switched Controller	A type of controller that sends a signal when it is switched from one state to another. E.g. on or off. (Often 0-63 are off 64-127 are on)
Quantise	A process that is used to adjust the timing of MIDI notes so that they are played in time with a click track.
Velocity	The speed at which a MIDI note is played, which is used to control the volume and timbre of the note.
MIDI Controller (value)	These change a characteristic of the sound or track. Can be switched or continuous.
Continuous controller	A type of controller that has a range of possible values. Values range between 0 and 127.
Serial protocol	A set of instructions in a specific order that are sent one after another.